

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q92234

Christian HEMBD

Appln. No.: 10/562,577

Group Art Unit: 2872

Confirmation No.: 7865

Examiner: Arnel C LAVARIAS

Filed: November 9, 2006

For: CORRECTING DEVICE TO COMPENSATE FOR POLARIZATION DISTRIBUTION  
PERTURBATIONS

**REQUEST FOR CORRECTED OFFICIAL FILING RECEIPT**

**ATTN:** Office of Initial Patent Examination

Filing Receipt Correction

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

We enclose a copy of the Official Filing Receipt for the above-identified application and request the following corrections:

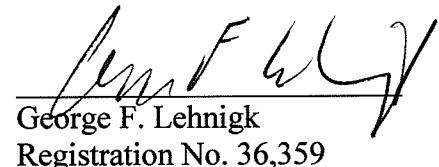
**Under Domestic Priority data as claimed by Applicant:**

**Delete:** PCT/EP04/06504 06/14/2005

**Insert:** PCT/EP2004/06504 06/17/2004

Verification for the requested correction is indicated on the PCT Cover Page of WO 2005/001527 A1 as well as on the Declaration filed November 9, 2006.

Respectfully submitted,



George F. Lehnigk  
Registration No. 36,359

SUGHRUE MION, PLLC  
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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: April 27, 2010



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
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APPL. NO.	FILING OR 371(c) DATE	ART. UNIT	FIL-FEE REC'D	ATTY. DOCKET NO	TOT CLMS	IND. CLMS
10/562,577	11/09/2006	3643	1030	Q92234	13	1

23373  
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DOCKETED

APR 27 2007

CONFIRMATION NO. 7865  
FILING RECEIPT



\*OC000000023534751\*

Date Mailed: 04/26/2007

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

**Applicant(s)**

Christian Hembd, Goeppingen-Faurndau, GERMANY; ✓

**Assignment For Published Patent Application**

CARL ZEISS SMT AG ✓

**Power of Attorney:** The patent practitioners associated with Customer Number 23373.

**Domestic Priority data as claimed by applicant**

This application is a 371 of PCT/EP04/06504 06/17/2005 ✓

**Foreign Applications**

GERMANY 103 28 938.0 06/27/2003

**If Required, Foreign Filing License Granted:** 04/25/2007

**The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US10/562,577**

**Projected Publication Date:** 08/02/2007

**Non-Publication Request:** No

**Early Publication Request: No**

**Title**

Correcting device to compensate for polarization distribution perturbations and projection objective for microlithography

**Preliminary Class**

452

## **PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process simplifies the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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**(19) Weltorganisation für geistiges Eigentum  
Internationales Büro**



(43) Internationales Veröffentlichungsdatum  
6. Januar 2005 (06.01.2005)

PCT

(10) Internationale Veröffentlichungsnummer  
**WO 2005/001527 A1**

(51) Internationale Patentklassifikation<sup>7</sup>: G02B 5/30, [DE/DE]; Buchenstr. 20, 73035 Göppingen-Faurndau  
27/00, 13/14 (DE).

(21) Internationales Aktenzeichen: **IPC/1BP2004/006501** (74) Anwalt: **SCHWANHÄUSSEN**, Gernot; Ostertag & Partner, Eibenweg 10, 70597 Stuttgart (DE).

**(22) Internationales Anmeldedatum:**

## (25) Einreichungssprache: Deutsch

## (26) Veröffentlichungssprache: Deutsch

**(30) Angaben zur Priorität:**

(71) **Anmelder (für alle Bestimmungsstaaten mit Ausnahme von US):** CARL ZEISS SMT AG [DE/DE]; Carl-Zeiss-Strasse 22, 73447 Oberkochen (DE).

(72) Erfinder; und

(75) Erfinder/Anmelder (nur für US): HEMBD, Christian

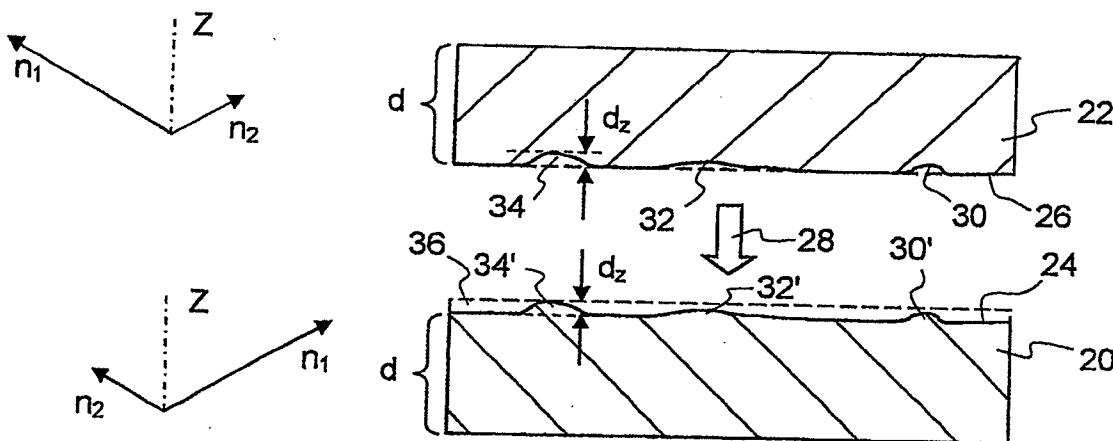
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(84) Bestimmungsstaaten (soweit nicht anders angegeben, für jede verfügbare regionale Schutzrechtsart): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG

[Fortsetzung auf der nächsten Seite]

**(54) Title: CORRECTIVE DEVICE FOR COMPENSATING DISTURBANCES OF POLARIZATION DISTRIBUTION, AND MICROLITHOGRAPHIC PROJECTION LENS**

(54) Bezeichnung: KORREKTUREINRICHTUNG ZUR KOMPENSATION VON STÖRUNGEN DER POLARISATIONSVERTEILUNG SOWIE PROJEKTIONSOBJEKTIV FÜR DIE MIKROLITHOGRAPHIE



**(57) Abstract:** Disclosed is a corrective device for compensating disturbances of polarization distribution across the cross-section of a light beam (10). Said corrective device comprises a corrective member (18; 118) encompassing two double-refractive corrective elements (20, 22; 120a, 120b, 122; 220; 222; 320, 322) with two substantially parallel surfaces (24, 26; 126, 127). The thickness (d) of the corrective element (22, 122, 222) is essentially constant between said surfaces (26; 126, 127). At least one of the surfaces (24, 26; 126, 127) of at least one of the corrective elements (20, 22; 120a, 120b, 122; 220; 222; 320, 322) is refinished in such a way that local irregularities in thickness  $\Delta d$  are created by means of which the disturbances of polarization distribution are at least nearly compensated. The arrangement, thickness (d), and double-refractory properties of the corrective elements (20, 22; 120a, 120b, 122; 220; 222; 320, 322) are selected such that the double-refractive effects thereof mutually cancel each other if the local irregularities in thickness  $\Delta d$  are not taken into consideration. The inventive corrective device influences polarization only at points where disturbances are to be compensated.

[Fortsetzung auf der nächsten Seite]

# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION (37 C.F.R. 1.63)

## Erklärung und Vollmacht für Patentanmeldung (37 C.F.R. 1.63)

### German Language Declaration

Ich erkläre hiermit:

dass der Wohnsitz, die Postanschrift und die Staatsangehörigkeit jedes Erfinders den im Nachstehenden nach deren Namen aufgeführten Angaben entsprechen,  
dass, nach bestem Wissen, die nachstehend genannten Erfinder die ursprünglichen und ersten Erfinder des Gegenstandes sind, der beansprucht wird und für den ein Patent für die Erfindung mit folgendem Titel beantragt wird:

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ODER

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Ich bestätige hiermit, dass ich den Inhalt des oben angegebenen Anmeldetextes, einschließlich der Ansprüche, die gegebenenfalls, wie oben erwähnt, abgeändert wurden, überprüft und verstanden habe.

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I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

CORRECTING DEVICE TO COMPENSATE FOR  
POLARIZATION DISTRIBUTION  
PERTURBATIONS AND PROJECTION  
OBJECTIVE FOR MICROLITHOGRAPHY

the specification of which is attached hereto

OR

was filed on \_\_\_\_\_ as United States Application Number or PCT International Application Number \_\_\_\_\_ (Confirmation No. \_\_\_\_\_), and was amended on \_\_\_\_\_

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for continuation-in-part application(s), material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

## German Language Declaration

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Prior Foreign Application Number(s)  
Anmeldenummern früherer Auslandsanmeldungen

103 28 938.0  
(Application Number)  
(Anmeldenummer)

DE  
(Country)  
(Land)

(Application Number)  
(Anmeldenummer)

(Country)  
(Land)

Ich beanspruche hiermit nationale Priorität unter 35 U.S.C. 119(e) aller unten aufgeführten US-Provisional-Anmeldungen.

(Application Number)  
(Anmeldenummer)

(Filing Date)  
(Anmeldetag)

(Application Number)  
(Anmeldenummer)

(Filing Date)  
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Ich beanspruche hiermit die mir unter 35 U.S.C. 120 zustehenden Vorteile aller unten aufgeführten US-Patentanmeldungen bzw. gemäß § 365(c) aller PCT internationalen Anmeldungen, welche die Vereinigten Staaten von Amerika benennen, und erkenne, insofern der Gegenstand jedes früheren Anspruchs der vorliegenden Patentanmeldung nicht in einer US-Patentanmeldung bzw. PCT internationalen Anmeldung in einer gemäß 35 U.S.C. 112, erster Absatz, vorgeschriebenen Art und Weise offenbart wurde, meine Pflicht zur Offenbarung jeglicher Informationen an, die für die Patentfähigkeit der vorliegenden Patentanmeldung in Einklang mit 37 C.F.R. 1.56 von Belang sind und die im Zeitraum zwischen dem Anmeldetag der früheren Patentanmeldung und dem nationalen oder dem (PCT) internationalen Anmeldetag bekannt geworden sind.

Prior U.S. or International Application Number(s)  
Vorherige US- oder internationale Anmeldenummer(n)

PCT/EP2004/006504  
(Application Number)  
(Anmeldenummer)

17 June 2004  
(Filing Date)  
(Anmeldetag)

(Application Number)  
(Anmeldenummer)

(Filing Date)  
(Anmeldetag)

Ich erkläre hiermit, dass alle in der vorliegenden Erklärung von mir gemachten Angaben nach bestem Wissen und Gewissen der Wahrheit entsprechen und ferner dass ich diese Angaben in Kenntnis dessen gemacht habe, dass vorsätzlich falsche Angaben oder dergleichen gemäß 18 U.S.C. 1001 mit Geldstrafe und/oder Gefängnis bestraft werden können, und dass derartige vorsätzlich falsche Angaben die Rechtswirksamkeit der vorliegenden Patentanmeldung oder eines aufgrund der Angaben erteilten Patentes gefährden können.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application(s) which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application(s) having a filing date before that of the application on which priority is claimed.

Priority Claimed?  
Priorität beansprucht?  
Yes/Ja  No/Nein

27 June 2003

(Filing Date)  
(Anmeldetag)

(Filing Date)  
(Anmeldetag)

I hereby claim domestic priority under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

I hereby claim benefit under 35 U.S.C. 120 of any United States application(s) or 365(c) of any PCT international application(s) designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in a listed prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge my duty to disclose any information material to the patentability of this application as defined in 37 C.F.R. 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

pending  
(Status: patented, pending, abandoned)  
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(Status: patented, pending, abandoned)  
(Status: patentiert, anhängig, aufgegeben)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

## German Language Declaration

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**POWER OF ATTORNEY:** I hereby appoint all attorneys of SUGHRUE MION, PLLC who are listed under the USPTO Customer Number shown below as my attorneys to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith, recognizing that the specific attorneys listed under that Customer Number may be changed from time to time at the sole discretion of Sughrue Mion, PLLC, and request that all correspondence about the application be addressed to the address filed under the same USPTO Customer Number.

### STATEMENT OF ACCURATE TRANSLATION IN ACCORDANCE WITH 37 C.F.R. §1.69(b):

The declaration and power of attorney is an accurate translation of the corresponding English language declaration and power of attorney.

Signature Oscar M. M.

Date 4/8/04

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

### Telefonische Auskünfte:

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(202) 293-7060

### NAME OF SOLE OR FIRST INVENTOR:

Name des einzigen oder ersten Erfinders:

Given Name (first and middle [if any]) Vorname(n)[falls zutreffend]	Christian	Family Name or Surname Familien- oder Nachname	Hembd
Inventor's signature Unterschrift des Erfinders	<u>Christian Hembd</u>		
Residence: Wohnsitz:	<u>Goeppingen-Faurndau</u>		
Mailing Address: Postanschrift:	<u>Buchenstr. 20, D-73035 Goeppingen-Faurndau, DE</u>		

### NAME OF SECOND INVENTOR:

Name des zweiten Erfinders:

Given Name (first and middle [if any]) Vorname(n)[falls zutreffend]	Family Name or Surname Familien- oder Nachname
Inventor's signature Unterschrift des Erfinders	Date Datum
Residence: Wohnsitz:	Citizenship Staatsangehörigkeit
Mailing Address: Postanschrift:	German